

Claims

1. Fiber gratings characterized in that it comprises a core made from silica glass free of germanium and a cladding surrounding the outer periphery thereof, and that said core has gratings written in by irradiating femtosecond laser or picosecond laser radiations.
2. Fiber gratings as claimed in claim 1, which is characterized in that said core is made from a silica glass containing 100 to 1000 ppm of fluorine.
3. Fiber gratings as claimed in claim 1 or claim 2, which is characterized in that said cladding is made from a silica glass containing 1000 to 7000 ppm of fluorine, or a silica glass containing 2000 to 10000 ppm of boron.
4. Fiber gratings as claimed in claim 1 or claim 2, which is characterized in that said cladding is made from an ultraviolet-transmitting resin.
5. Fiber gratings as claimed in one of claims 1 to claim 4, which is characterized in that said cladding comprises plural hollow holes in parallel with the optical axis.
6. Fiber gratings as claimed in one of claims 1 to claim 5, which is characterized in that said cladding is provided with a protective coating layer on the outer periphery thereof.
7. A method for fabricating fiber gratings, characterized in that it comprises irradiating an interference light generated by interfering two coherent femtosecond laser radiations or

picosecond laser radiations to an optical fiber comprising a core made from silica glass free of germanium and a cladding surrounding the outer periphery thereof, thereby writing the gratings in said core.

8. A method for fabricating fiber gratings as claimed in claim 7, which is characterized in that a flat part is provided to the outer surface of said cladding, and that said interference light is irradiated to said flat part.

9. A method for fabricating fiber gratings as claimed in claim 7 or claim 8, which is characterized in that a protective coating layer is provided to the outer periphery of said cladding, and that said interference light is irradiated from the outer side of said protective coating layer.